

Appln. No. 10/783,375
Filing Date: February 20, 2004
Supp. Prel. Amdt. dated May 16, 2006

AMENDMENTS TO THE CLAIMS

Listing of Claims:

Claims 1-21 (Canceled).

Claim 22. (Previously Presented) A signal transmission system, comprising:
at least one processor capable of accepting an incoming call from a first communication link;

the at least one processor capable of identifying a call type of the incoming call, the call type comprising one of at least a data call, a facsimile call, and a voice call;

the at least one processor capable of processing the incoming call according to a data protocol, if the incoming call is identified as a data call;

the at least one processor capable of processing the incoming call according to a facsimile protocol, if the incoming call is identified as a facsimile call; and

the at least one processor capable of establishing voice communication between the first communication link and a second communication link, if the incoming call is identified as a voice call.

Claim 23. (Previously Presented) The system of claim 22 wherein the first communication link is a conventional telephone switching network link.

Claim 24. (Previously Presented) The system of claim 23 wherein the first communication link is an analog link.

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Claim 25. (Previously Presented) The system of claim 22 wherein the identifying comprises:

assigning the incoming call a call type of facsimile call, if signals received via the first communication link are compliant with a facsimile modem standard;

assigning the incoming call a call type of data call, if the signals received via the first communication link are compliant with a data modem standard; and

assigning the incoming call a call type of voice call, if the signals received via the first communication link are not compliant with a data modem standard and the signals received via the first communication link are not compliant with a facsimile modem standard.

Claim 26. (Previously Presented) The system of claim 22 wherein the establishing voice communication between the first communication link and the second communication link comprises:

converting analog representations of voice signals to digital representations of voice signals; and

converting digital representations of voice signals to analog representations of voice signals.

Claim 27. (Previously Presented) The system of claim 26 wherein the second communication link is compatible with a conventional telephone.

Claim 28. (Previously Presented) The system of claim 26 wherein the converting digital representations of voice signals to analog representations of voice signals comprises buffering the digital representations for a period of time in order to minimize gaps in the resulting analog representation caused by changes in a propagation delay.

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Claim 29. (Previously Presented) The system of claim 26 wherein converting analog representations of voice signals to digital representations of voice signals comprises:

determining voice activity based upon voice signals from the second communication link;

reducing the quantity of information transmitted via the first communication link, if voice activity is determined to be below a predetermined level; and

refraining from reducing the quantity of information transmitted via the first communication link, if voice activity is determined not to be below the predetermined level.

Claim 30. (Previously Presented) The system of claim 22 wherein the processing the incoming call according to a data protocol comprises:

determining whether the incoming call is a packet voice call;

establishing voice communication between the first communication link and the second communication link, if the incoming call is a packet voice call and a destination of the incoming call is the second communication link;

establishing voice communication between the first communication link and a packet network, if the incoming call is a packet voice call and the destination of the incoming call is not the second communication link; and

exchanging data, via the first communication link, if the incoming call is not a packet voice call.

Claim 31. (Previously Presented) The system of claim 30 wherein the voice packets are packetized according to an Internet protocol (IP).

Claim 32. (Previously Presented) The system of claim 31 wherein the Internet protocol (IP) is the transmission control protocol (TCP)/Internet protocol (IP).

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Claim 33. (Previously Presented) The system of claim 30 wherein the establishing voice communication between the first communication link and the second communication link comprises:

- delivering a ring signal via the second communication link;
- detecting whether an off-hook condition exists on the second communication link;
- sending, via the first communication link, an indication of call connection, if an off-hook condition is detected on the second communication link; and
- refraining from sending, via the first communication link, an indication of call connection, if an off-hook condition is not detected on the second communication link.

Claim 34. A method for operating a signal transmission device, the method comprising:

- receiving a call via a communication network;
- determining that the call is a packet voice call;
- sending a ring signal to a voice telephony device;
- detecting an off-hook condition of the voice telephony device; and
- establishing voice communication between the communication network and the voice telephony device.

Claim 35. (Previously Presented) The method of claim 34 wherein the communication network is a conventional telephone switching network.

Claim 36. (Previously Presented) The method of claim 35 wherein the call is received using analog signaling.

Claim 37. (Previously Presented) The method of claim 34 wherein the voice packets are packetized according to an Internet protocol (IP).

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Claim 38. (Previously Presented) The method of claim 37 wherein the Internet protocol (IP) is the transmission control protocol (TCP)/Internet protocol (IP).

Claim 39. (Previously Presented) The method of claim 34 wherein the voice telephony device is a conventional telephone.

Claim 40. (Previously Presented) The method of claim 34 wherein the voice telephony device resides on a packet network.

Claim 41. (Previously Presented) The method of claim 34 wherein the establishing comprises:

converting analog representations of voice signals to digital representations of voice signals; and

converting digital representations of voice signals to analog representations of voice signals.

Claim 42. (Previously Presented) The method of claim 41 wherein the converting digital representations of voice signals to analog representations of voice signals comprises buffering the digital representations for a period of time in order to minimize gaps in the resulting analog representation caused by changes in a propagation delay.

Claim 43. (Previously Presented) The method of claim 41 wherein converting analog representations of voice signals to digital representations of voice signals comprises:

determining voice activity based upon voice signals from the voice telephony device;

reducing the quantity of information transmitted via the communication network, if voice activity is determined to be below a predetermined level; and

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refraining from reducing the quantity of information transmitted via the communication network, if voice activity is determined not to be below the predetermined level.

Claim 44. (Previously Presented) A signal transmission device comprising:
interface circuitry for communication of signals via at least one conventional telephone switching network link, the interface circuitry supporting a plurality of communication modes;
a host device communicatively coupled to the interface circuitry;
a packet network interface for communication via a packet network, the packet network interface communicatively coupled to the host device; and
the host device having stored thereon software capable of supporting communication between the host device and the at least one conventional telephone switching network link, and between the host device and the packet network.

Claim 45. (Previously Presented) The signal transmission device of claim 44, wherein the software is capable of:
identifying a communication mode of a call received via the at least one conventional telephone switching network link; and
establishing communication, via the at least one conventional telephone switching network, in the identified mode.

Claim 46. (Previously Presented) The device of claim 44 wherein the signals are analog signals.

Claim 47. (Previously Presented) The device of claim 44 wherein the plurality of communication modes comprises a facsimile mode.

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Claim 48. (Previously Presented) The device of claim 44 wherein the plurality of communications modes comprises a packet voice mode.

Claim 49. (Previously Presented) The device of claim 44 wherein the plurality of communications modes comprises a data mode.

Claim 50. (Previously Presented) The device of claim 44 wherein the interface circuitry comprises a facsimile modem.

Claim 51. (Previously Presented) The device of claim 50 wherein the interface circuitry comprises a data modem.

Claim 52. (Previously Presented) The device of claim 44 wherein the host device is a personal computer.

Claim 53. (Previously Presented) The device of claim 44 wherein a protocol of the packet network comprises an Internet protocol.

Claim 54. (Previously Presented) The signal transmission device of claim 44, wherein the software is capable of:

originating a call via the at least one conventional telephone switching network link;
and

establishing communication, via the at least one conventional telephone switching network, in one of the plurality of communication modes.

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Claim 55. (Previously Presented) A machine-readable storage, having stored thereon a computer program having a plurality of code sections for implementing a signal transmission system, the code sections executable by a machine for causing the machine to perform the operations comprising:

- accepting an incoming call from a first communication link;
- identifying a call type of the incoming call, the call type comprising one of at least a data call, a facsimile call, and a voice call;
- processing the incoming call according to a data protocol, if the incoming call is identified as a data call;
- processing the incoming call according to a facsimile protocol, if the incoming call is identified as a facsimile call; and
- establishing voice communication between the first communication link and a second communication link, if the incoming call is identified as a voice call.

Claim 56. (Previously Presented) The machine-readable storage of claim 55 wherein the first communication link is a conventional telephone switching network link.

Claim 57. (Previously Presented) The machine-readable storage of claim 56 wherein the first communication link is an analog link.

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Claim 58. (Previously Presented) The machine-readable storage of claim 55 wherein the identifying comprises:

assigning the incoming call a call type of facsimile call, if signals received via the first communication link are compliant with a facsimile modem standard;

assigning the incoming call a call type of data call, if the signals received via the first communication link are compliant with a data modem standard; and

assigning the incoming call a call type of voice call, if the signals received via the first communication link are not compliant with a data modem standard and the signals received via the first communication link are not compliant with a facsimile modem standard.

Claim 59. (Previously Presented) The machine-readable storage of claim 55 wherein the establishing voice communication between the first communication link and the second communication link comprises:

converting analog representations of voice signals to digital representations of voice signals; and

converting digital representations of voice signals to analog representations of voice signals.

Claim 60. (Previously Presented) The machine-readable storage of claim 59 wherein the second communication link is compatible with a conventional telephone.

Claim 61. (Previously Presented) The machine-readable storage of claim 59 wherein the converting digital representations of voice signals to analog representations of voice signals comprises buffering the digital representations for a period of time in order to minimize gaps in the resulting analog representation caused by changes in a propagation delay.

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Claim 62. (Previously Presented) The machine-readable storage of claim 59 wherein converting analog representations of voice signals to digital representations of voice signals comprises:

- determining voice activity based upon voice signals from the second communication link;

- reducing the quantity of information transmitted via the first communication link, if voice activity is determined to be below a predetermined level; and

- refraining from reducing the quantity of information transmitted via the first communication link, if voice activity is determined not to be below the predetermined level.

Claim 63. (Previously Presented) The machine-readable storage of claim 55 wherein the processing the incoming call according to a data protocol comprises:

- determining whether the incoming call is a packet voice call;

- establishing voice communication between the first communication link and the second communication link, if the incoming call is a packet voice call and a destination of the incoming call is the second communication link;

- establishing voice communication between the first communication link and a packet network, if the incoming call is a packet voice call and the destination of the incoming call is not the second communication link; and

- exchanging data, via the first communication link, if the incoming call is not a packet voice call.

Claim 64. (Previously Presented) The machine-readable storage of claim 63 wherein the voice packets are packetized according to an Internet protocol (IP).

Claim 65. (Previously Presented) The machine-readable storage of claim 64 wherein the Internet protocol (IP) is the transmission control protocol (TCP)/Internet protocol (IP).

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Claim 66. (Previously Presented) The machine-readable storage of claim 63 wherein the establishing voice communication between the first communication link and the second communication link comprises:

- delivering a ring signal via the second communication link;
- detecting whether an off-hook condition exists on the second communication link;
- sending, via the first communication link, an indication of call connection, if an off-hook condition is detected on the second communication link; and
- refraining from sending, via the first communication link, an indication of call connection, if an off-hook condition is not detected on the second communication link.